

REMARKS

Review and reconsideration of the Final Office Action dated November 12, 2010, and entry of present Amendment B is respectfully requested.

Claims 1-35 have been canceled. Claims 36 to 53 have been added. Support for new Claims 36 to 53 can be found on Claims 1-35 as originally filed and paragraphs [0009], [0034], [00028] to [00036], and [00061] of the specification as originally filed.

No new matter has been added to the claims by the present amendment.

FURTHERMORE, THE EXAMINER IS RESPECTFULLY REQUESTED TO CONTACT THE UNDERSIGNED AT THE INDICATED TELEPHONE NUMBER TO CONFIRM THE DATE AND TIME SET ON THE ATTACHED INTERVIEW REQUEST.

Applicant would like to respectfully point out to the Examiner that the feature of the present invention is the step of adding a specific amount of a unique composition including specific minerals to a **finished base beer wherein the finished beer is chosen from stout beer, pilsener beer, light beer, extra light beer, medium strength beer, or full strength beer**. The present invention **does not add the mineral additive during the preparation process of the beer**, but rather after the beer is finished.

Furthermore, the present invention does not simply replace the minerals diluted as a result of reducing the level of alcohol or dilution of the finished base beer during the dilution step to bring the mineral concentration to a certain range, but rather add a specific amount of a unique composition, which is constant for a specific type of beer, on top of the minerals already present on the finished base beer.

The present invention adds a further complement of minerals to a finished base beer, in which concentration already has been defined depending on the type of beer. The amount and proportion of the minerals are constant and depend only on the type of beer and not in the amount of minerals present on the beer that is being enhanced.

The present invention is not trying to add the minerals additive to reach a predetermined level of mineral in the beer.

After a long process of search and research, the present inventor found that the addition of certain levels of a complex mixture of minerals enhances the capacity to dilute beers by compensating somewhat for the reduction and disruption of flavors and taste characteristics (profiles) commensurate with dilution. Additionally, it is found that by the addition of the complex of minerals to beers of all strengths that flavor and taste perceptions are enhanced.

Applicants' further comments regarding the differences between the present invention and the cited reference can be found below.

In view of the above, Applicants believe that the present set of claims is novel and not obvious over the cited references.

Applicants' further comments regarding the cited references can be found below.

Office Action

Turning to the Office Action, the paragraphing of the Examiner is adopted.

Claims Rejections– Formalities

The Examiner rejected Claims 9 and 29 because of informalities.

The Examiner's position can be found on pages 2-3 of the Office Action.

In response, Applicant has amended the claims to overcome the formalities rejections.

Accordingly, withdrawal of the claims rejection is respectfully requested.

Claims Rejection- (Prior Art – Obviousness)

The Examiner rejected Claims 1-35 under 35 U.S.C. 103(a) as being obvious over Donhowe (US 2003/0157218) in view of Costa (WO 01/68534) further in view of Lindon et al. (US 5,786,006).

The position of the Examiner can be found on pages 3-8 of the Office Action.

Applicants respectfully traverse for the same reasons as set forth in Amendment A filed June 29, 2009, and the following arguments and remarks.

The present set of claims contains three independent claims, namely, Claims 36, 48, and 53. Claims 36 and 48 are directed to a method for enhancing a diluted beer and Claim 53 is directed to a diluted beer made according to the method of Claim 36.

The following remarks are addressed to independent Claims 36, 48, and 53, because if these claims are not anticipated or obvious, it follows that none of the other rejected dependent claims are anticipated or obvious.

Applicant notes that Donhowe teaches a process for the preparation of a sport beer having enhanced nutrition. Various supplements including proteins, peptide, amino acid, antioxidant, mineral and/or vitamin supplements are added to the beer during the preparation process to increase the nutritional value. (See Abstract, paragraphs [008] and [0014])

Applicant notes that the reference only teaches the addition of calcium, zinc and iron (paragraphs [0015] -[0017]). In addition, Applicants note that Examples I and II have no added minerals, and Example III has calcium in the form of calcium citrate, which is said to provide 20% of the RDA.

Compared with Claims 36 and 48, the Donhowe reference fails to teach: 1) adding a mineral additive **to the finished base beer** wherein the finished beer is chosen from stout beer, pilsener beer, light beer, extra light beer, medium strength beer, or full strength beer; 2) a mineral additive having: group A minerals such as magnesium; group B minerals such as

phosphorus, potassium, silicon, sodium, chlorine; group C minerals such as boron, chromium, cobalt, copper, iodine, lithium, manganese, molybdenum, nickel, selenium, tin, and vanadium; 3) the concentration ranges of the minerals of the groups A, B, C, and D of the mineral additive are **the concentration of these minerals in the mineral additive that is added to the finished base beer**; and 4) the mineral additive enhances taste characteristics of the finished base beer.

Compared with Claim 48, the Donhowe reference further fails to teach diluting the base beer between 20% and 90% and adding the mineral additive to the finished base beer before gassing with carbon dioxide

Compared with Claim 53, the Donhowe reference further fails to teach a beer made by the method of Claim 1.

Applicant would like to respectfully point out to the Examiner that the feature of the present invention is the step of adding a specific amount of a unique composition including specific minerals to a **finished base beer**. The present invention **does not add the mineral additive during the preparation process of the beer**, but rather after the beer is finished.

Furthermore, the present invention does not simply replace the minerals diluted as a result of reducing the level of alcohol or dilution of the finished base beer during the dilution step to bring the mineral concentration to a certain range, but rather add a specific amount of a unique composition, which is constant for a specific type of beer, on top of the minerals already present on the finished base beer.

The present invention adds **a further complement of minerals to a finished base beer**, in which concentration already has been defined depending on the type of beer. The amount and proportion of the minerals are constant and depend only on the type of beer and not in the amount of minerals present on the beer that is being enhanced.

The present invention is not trying to add the mineral additive to reach a predetermined level of minerals in the beer.

After a long process of search and research, the present inventor found that the addition of certain levels of a complex mixture of minerals enhances the capacity to dilute beers by compensating somewhat for the reduction and disruption of flavors and taste characteristics (profiles) commensurate with dilution. Additionally, it is found that by the addition of the complex of minerals to beers of all strengths that flavor and taste perceptions are enhanced.

Applicant notes that nowhere in the Donhowe reference can be found the step of adding the mineral additive to the finished base beer, because Donhowe adds the nutrients during the production process of the beer (See paragraph [00017] of the reference).

Regarding Claim 48 Donhowe fails to teach the step of diluting the base beer to form a diluted beer and then adding the mineral additive to the diluted beer.

Applicant notes the Examiner's position that the simple fact that because additives, sometimes diluted in water, are added during the production process of the beer, the beer can be considered a diluted beer.

Applicant respectfully points out to the Examiner that adding spices, sometimes diluted in water, to the worst during the beer production process is a normal step of the beer production industry including the production of full strength beer. The above identified step cannot be confused with the step of producing a diluted beer.

To produce a diluted beer, the base beer is produced from wort with modified characteristics, in particular stronger taste and body, such that subsequent dilution produces a beverage with an acceptable flavor.

In addition, Applicant notes that the Examiner has emphasized the issue that adding mineral additives to a diluted beer to bring back the mineral content of the diluted beer to the mineral content of the undiluted beer (page 5, paragraph 14, of the outstanding Office Action).

Applicant respectfully points out to the Examiner that this indication is incorrect; the concentrations defined in the claims for each one of the minerals is not the concentration of minerals found on the standard beer.

In order to support Applicant's position that the invention does not simply bring back the mineral content to the modified beer to the mineral content of the unmodified beer, Applicant is providing herewith the following article:

"Multivariate characterization of beers according to their mineral content" Angel Alcazar et al. Elsevier Science, (Talanta) 2002, pp 45-52. (See attachment A)

Table 3 of Alcázar et al. teaches the mineral content of beer samples. The relative proportions of each one of the studied elements vary relative to the proportions defined in the present set of claims. Thus, for example, levels of B, Mn Fe defined in claim 1 are lower than the levels of the same minerals defined by Table 3. The claimed level of B is 0 - 76 ug/L whereas the lowest level table 3 is about 115 ug/L; the claimed level of Mn is 0 - 1.6ug/L whereas the lowest level in table 3 is 58ug/L; the claimed level of Fe 0 - 20ug/L whereas the lowest level in table 3 is 60ug/L. For Mg only 2 of the 32 samples fall within the scope of the claim; the others are too high.

Regards table 3, Applicant notes that this is not inclusive of all of the minerals that the specification defines. Notable absences include Si, and Cl, and the applicant has not attempted to quantify these for full strength beers.

If the aim of the present invention was to bring back the minerals to the level found in full strength beer, one would expect that the claimed ranges of the minerals added according to the claims of the present invention would by and large be proportional to the ranges of mineral contents of existing beers and, unless the beers published in Alcázar are unusually skewed, which applicant believes is not the case, this supports applicant's assertion that it is not attempting to reconstitute the mineral content of the diluted beer to that when it was undiluted.

Applicant also notes the Examiner's statement at page 9, paragraph 6a, that it is not just minerals that make up taste components, and "that there are numerous factors determining the taste of a particular beer including minerals".

Applicant respectfully points out to the Examiner that this statement teaches away from the present invention of using a balance of minerals alone to enhance the flavor of a diluted or even, undiluted, beer.

It is applicant's position that the mineral addition of Dohhawe would not inherently enhance the taste characteristics because i) it does not include addition of all the minerals of group A and B of the claims and ii) it does not include the addition of these minerals in the defined final concentrations.

The addition of calcium, zinc and/or iron as minerals in combination with other components does not entail the method of adding the mineral combination defined in claim 36.

Combining Donhowe and Costa

Applicant notes that the Examiner cited the Costa reference to show the teaching of adding additives to drinks and potable water.

According to the Examiner, given the spectrum of minerals disclosed by Costa as well as the amount and given that it is well known that minerals provide nutritional and health benefits, the examiner is of the opinion that it would be obvious to a person skilled in the art, at the time the present invention was made, to use the minerals in amounts, including those presently claimed, in order to produce beer with desired taste that also provides health and nutritional benefits to the consumer.

First, applicant notes that Costa does not overcome the deficiencies of Donhowe because Costa also fails to teach the step of adding the mineral additive having a specific amount of a unique composition, to the **finished base product**. Costa, as well as Donhowe, adds the nutrients during the production process and not to the finished product.

Furthermore, Applicant notes that the Costa reference only teaches the addition of minerals in general to a drink or water. The reference is silent regarding the use of a mineral additive **having the unique composition according to the present set of claims** to enhance the flavor of the drink. One is left uncertain as to what compounds are actually required.

Applicant notes that there is clearly no suggestion in Costa to provide minerals in particular proportions that co-act to provide a balanced taste. A balance of different proportions of at least the Group A and B minerals is not suggested by Costa. Furthermore there is no disclosure of the specific ranges claimed in the instant invention, which ranges are critical for a balanced flavor, as opposed to providing adequate levels from a nutritional point of view.

The reference is silent regarding combining specific minerals to form the mineral additive of the present invention. None of the listed minerals shine alone on the Costa reference.

All of the listed minerals have the same importance; thus, how would a person skilled in the art looking at the Costa reference be able to specifically choose from between all of the listed minerals, the 7 minerals needed to form the composition of the present set of claims?

Applicant notes the Examiner's comment at page 5, paragraph 20, that Donhowe discloses the motivation for adding supplements to the beer. Applicant however does not see that there is motivation to add the specific complement of minerals defined in claim 36, because Costa does not define the specific minerals of claim 36 or any of the claims.

The present inventor discovered that the selection of the claimed minerals at the claimed proportions produces a mineral additive that enhances the taste of a diluted beer and at the same time it is not harmful to humans or animals even if toxic chemicals form part of the mineral additive.

Only, after much experimentation and testing of many compounds, did the present Applicant discover that the specific mixture of minerals and the specific proportions would always provide the capacity to dilute beer by compensating somewhat for the reduction and disruption of flavor and taste characteristics (profiles) commensurate with the dilution.

There are some quite strong preferences in the source of the elements that form part of the present invention. The minerals must be provided as a soluble salt and the combination of minerals must not be in a form that provides imbalances to the final composition or interferes with the manufacturing process. The preferable elements are maintained in a form capable of impacting on taste, thus the salts in which the elements are provided should be intercompatible

and not, for example, complexed into forms that are unavailable for taste perception. Also there should be no other components that provide for significant adverse taste or health effects.

Applicant respectfully points out to the Examiner that it is well known in the art that several minerals tend to have an adverse effect on taste, thus, for example, calcium and magnesium are known to impart an earthy flavor to water.

One might therefore reasonably query why one would want to add these minerals to enhance the flavor of a beer if they adversely affect the flavor. The inventor has found that a balance of concentration of several minerals is required in which balance counteracts any adverse flavor input that might result from the addition of any one of the minerals on their own.

Furthermore, Applicant notes that it is not the intention or the outcome of the present invention to reconstitute the mineral balance of a beer with respect to the minerals claimed. There is essentially no guidance as to endpoint levels that one is hoping to achieve, and therefore the combination of Donhowe and Costa is of indefinite composition.

It seems to the applicant that the Examiner's argument in response to the position put to the submission made to the First Office Action is contradictory. On the one hand he states that applicant assumes that the beer taste is only due to mineral content - applicant disagrees that it stated that. What applicant did state is the balance of several minerals can improve the taste. The Examiner then goes on to state "that there are numerous factors determining the taste of a particular beer including the minerals." Applicant agrees that there are numerous factors determining taste and also states that therefore it is unexpected that the balance of minerals can lead to an enhanced taste in beers. Before the present invention one might expect to need to provide flavor enhancers in addition to minerals to improve the taste of a diluted beer. The

invention is thus not a rational design based on piecing together known integers, but rather an unexpected finding that by adjusting the mineral balance can lead to an improvement in taste.

It was not after a long search and research that the present inventor discovered that the claimed compounds do not adversely complex or interfere chemically with other compounds among the components.

The present inventor discovered by surprise that the addition of certain levels of a complex mixture of minerals enhances the capacity to dilute beer by compensating for the reduction and disruption of flavors and taste characteristics (profiles) commensurate with dilution. Additionally, it is found that by the addition of the specific combination of minerals to beers of all strengths that flavor and taste perceptions are enhanced compared with diluted beer which are only being diluted with water.

Thus, neither of the Donhowe or Costa references, taken alone or in combination, teach the present invention as currently claimed because both references fail to teach the addition of the mineral additive to the finished base beer and the mineral additive having a specific composition and specific proportions.

Thus, in the absence of teaching by Costa that producing the mineral additive according to the present invention would **always** provide the capacity to dilute beer by compensating somewhat for the reduction and disruption of flavor and taste characteristics (profiles) commensurate with the dilution, there was no reason why Applicants, or one skilled in the art following Costa teaching, will conclude with the present invention.

Thus, neither of the Donhowe and Costa references, taken alone or in combination, teaches the present invention as claimed.

Combining Dowhowe, Costa, and Lindon

Applicant's position regarding the combination of Donhowe and Costa references can be found above.

The Examiner cited the Costa reference to show the teaching of adding lithium into a beverage.

Applicant notes that Lindon refers to mineralized water formulation that has utility in preventing cardiovascular disease. The water contains certain amounts of strontium, magnesium, calcium and lithium. There is no reference to adding these compounds to enhance the flavor of a beer.

According to the Examiner, given the teaching of Donhowe (adding additives to a beer) and Costa (type and concentration of minerals), the examiner is of the opinion that it would be obvious to a person skilled in the art, at the time the present invention was made, to incorporate the minerals as taught by Donhowe and Costa and Lindon into the production process of Donhowe to compensate for the effects that dilution of a drink such as beer may have on the taste and mouth feel.

Water and beer are two different products that are produced by two very different processes. Furthermore, the lithium is a very reactive chemical that needs to be carefully monitored. Common side effects of lithium treatment include muscle tremors, twitching, ataxia and hypothyroidism. Long term use is linked to hyperparathyroidism, hypercalcemia (bone loss), hypertension, damage of tubuli in the kidney, nephrogenic diabetes insipidus (polyuria and polydipsia) and/or glomerular damage - even to the point of uremia, seizures and weight gain. Some of the side effects are a result of the increased elimination of potassium.

How would a person skilled in the art consider it obvious to add lithium to a beer process?

Furthermore, Applicant notes that the Lindon reference does not overcome the deficiencies of the Donhowe reference, taken alone or in combination, with Costa because the Lindon reference also fails to teach the step of adding the mineral additive, specific amount of a unique composition, to the **finished base product**. Lindon, as well as Donhowe and Costa, adds the nutrients during the production process and not to the finished product.

Furthermore, Applicant notes that the Lindon reference only teaches the addition of minerals in general to water. The reference is silent regarding the use of a mineral additive having the unique composition according to the present set of claims to enhance the flavor of the beer.

Applicant notes that there is clearly no suggestion in Lindon to provide minerals in particular proportions that co-act to provide a balanced taste. A balance of different proportions of at least the Group A and B minerals is not suggested by Lindon. Furthermore there is no disclosure of the specific ranges claimed in the instant invention, which ranges are critical for a balanced flavor, as opposed to providing adequate levels from a nutritional point of view.

Accordingly, withdrawal of the obviousness rejection in view of the combination of Donhowe, Costa, and Lindon is respectfully requested.

Favorable consideration and early issuance of the Notice of Allowance are respectfully requested. Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

Respectfully submitted,
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CERTIFICATE OF FILING

I hereby certify that a copy of the foregoing AMENDMENT B for U.S. Application No. 10/574,874 filed April 06, 2006, was electronically filed addressed: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on March 03, 2010.

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